Build a trade matching system with following conditions  -

A trade has following attributes -

first\_party, second\_party, amount, trade\_ref, location, product

• Two trades Trade1 and Trade2 are eligible for matching if and only if first\_party of Trade1 = second\_party of Trade2 &&second\_party of Trade1= first\_party of Trade2

• Matching percentage is calculated based on the matching fields (all above field are used for matching except location). System will keep finding best match unless trades matches 100 %

• Every time a trade enters into system, it will be checked against all eligible trades to see whether it is better match for any existing trade.

• Once two trades matches 100%, those no longer participate in matching activity.

Matching weight for different fields are -

first\_party = 10 %, second\_party = 10 %, product = 20 %, amount = 25 %, trade\_ref = 35 %

Total matching percentage is sum of all weights of all matching fields.

Example:

Trade\_1 enters into system with:

Trade\_1 [first\_party = "party1", second\_party = "party2", amount = 10, trade\_ref = "ref1", location = "DEL", product = "Spot"]

Since it is first trade, nothing will happen.

Trade\_2 enters into system with:

Trade\_2 [first\_party = "party2", second\_party = "party1", amount = 10, trade\_ref = "ref2", location = "DEL", product = "Spot"]

Based on matching criteria, Trade\_2 matches Trade\_1 and matching percentage is calculated as follows -

matching fields :first\_party = 10 %, second\_party = 10 %, amount = 25 %, product = 20 %

Matching percentage = 65 %

Trade\_3 enters into system with :

Trade\_3 [first\_party = "party1",second\_party = "party2",amount = 10, trade\_ref = "ref2", location = "DEL", product = "Spot"]

Based on matching criteria, Trade\_3 matches Trade\_2 and all fields matches. Hence matching percentage is 100 %. Trade\_2 & Trade\_3 are removed from system and no longer participates in matching.

Trade 1 [amount = 10, trade\_ref = " ref1", location = "DEL", first\_party = " party1", second\_party = " party2", product = "Spot"]

Trade 2 [amount = 10, trade\_ref = " ref2", location = "DEL", first\_party = " party2", second\_party = " party1", product = "Spot"]